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Telephony

The Journal of the Telephone Industry

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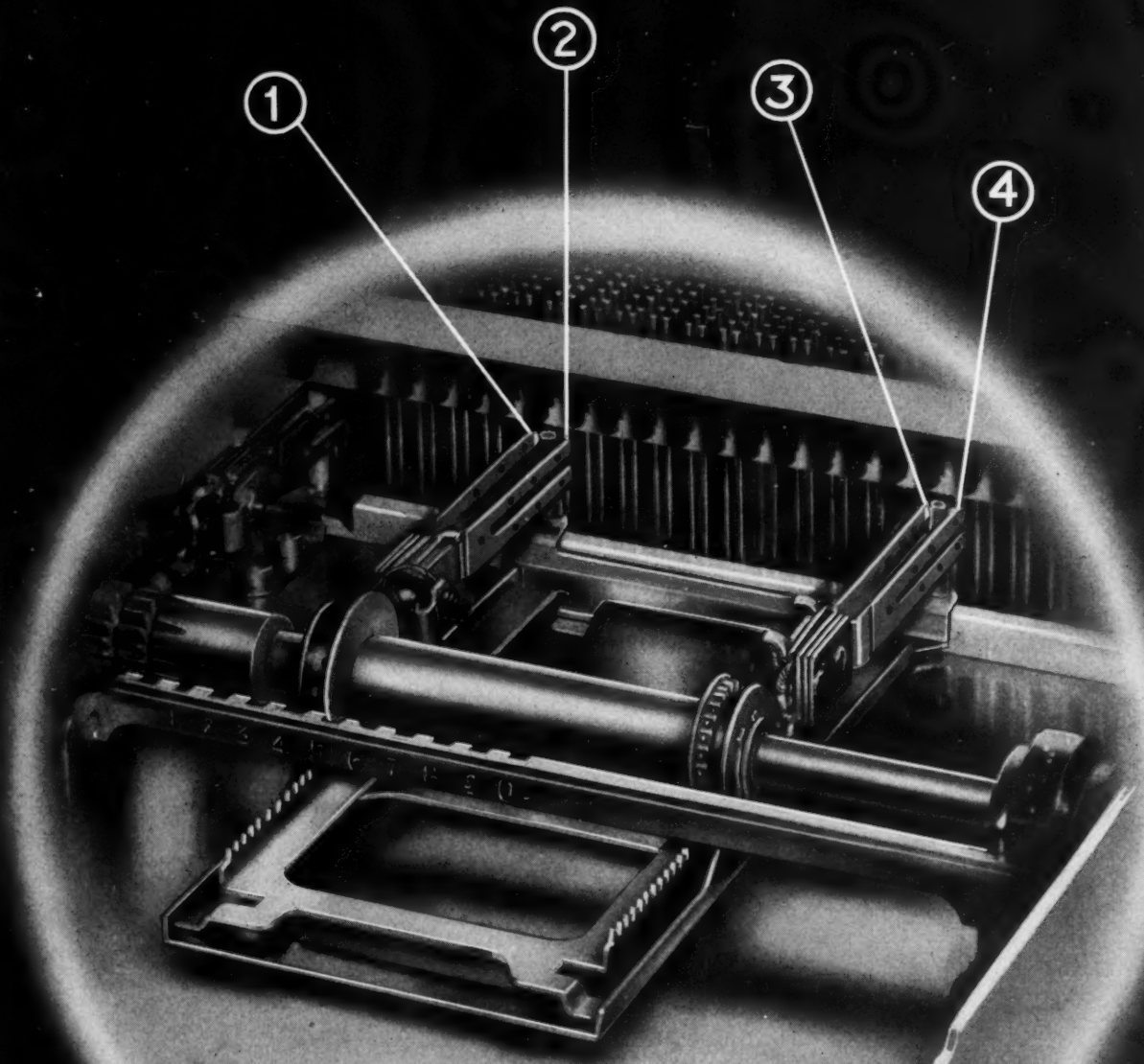
STROMBERG-CARL



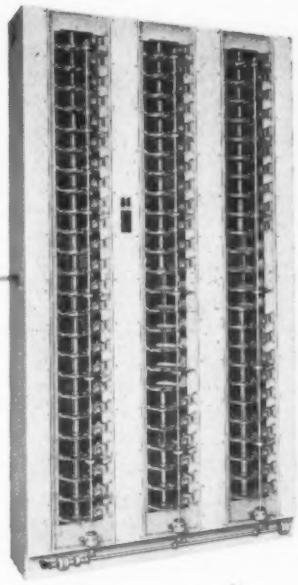
Close-up of the XY Switch during the "X" movement. Wires (1) and (2) are Tip and Ring; number (3) is the Sleeve Conductor; and number (4) the famous 4th Wire which solves party-line and dozens of other problems.

TELEPHONES, SWITCHBOARDS • SOUND EQUIPMENT, INDUSTRIAL, INTERCOMMUNICATION SYSTEMS • RADIOS, RADIO-PHONOGRAPHS, FM AND TELEVISION

7J PABX

- Central Office Trunks as Required
- 100 Local Stations or More
- Local Links as Required

This equip[illegible]nt is the 7J Rotary System designed for PABX installations. Any [illegible]ired line and link capacity can be furnished. Equipment is mounted [illegible] one or more master frames, each measuring 8′ 6½″ high, by 56″ wide, by 26″ deep. Frame construction, switches and relay gates are the same as those used in the 7J Rotary System.



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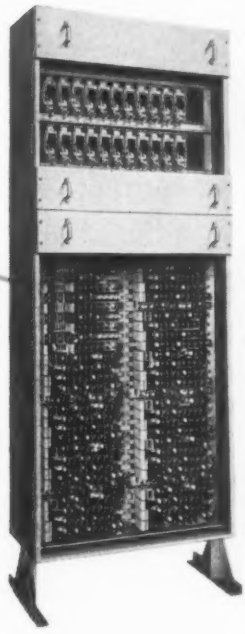
For large offices . . . stores . . . factories . . . institutions



35 type PABX

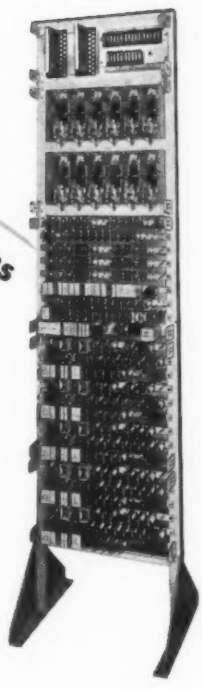
Available in Two Capacities

- 10 Central Office Trunks
- 50 Local Stations
- 6 Local Links

- 10 Central Office Trunks
- 99 Local Stations
- 12 Local Links

35 Type PABX is shown with dust covers removed. This equipment is capable of handling heavy traffic in both outside and local calls. The 50-line unit measures 8¾′ high, by 38¼″ wide, by 19¾″ deep. Two units 7′2″ high, by 38¼″ wide, by 19¾″ deep comprise the 99-line equipment. Racks are fully enclosed by dust-proof paneling with removable covers for easy access to wiring and components.

For Industrial plants . . . larger stores and institutions



25C PABX

- 5 Central Office Trunks
- 25 Local Stations
- 3 Local Links

25C PABX with all dust covers removed, provides easy access to all components and wiring. All equipment is compactly mounted on a vertical rack, 7′ high, by 21″ wide, by 20″ deep.

Key Pulsing Attendant's Set designed for efficient and convenient trunk call distribution with Federal's 35 type PABX.

Federal Telephone and Radio Corporation

100 KINGSLAND ROAD, CLIFTON, NEW JERSEY

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KEEPING FEDERAL YEARS AHEAD... is IT&T's world-wide research and engineering organization, of which the Federal Telecommunication Laboratories, Nutley, N. J., is a unit.

FLASHES AND PLUGS

ENOUGH IS ENOUGH. The desirability of peace and quiet was shown recently by a Cleveland, Ohio, woman who left home with her children. Her formerly tranquil dwelling was a practical joker's target, and in listing one day's callers, she said, "Cleaners have come to collect clothes that don't need cleaning; a refrigerator man came to repair a break the refrigerator did not have, and a steady stream of radio mechanics, plumbers, decorators, doctors and ambulances arrived from dawn to dusk."

But the pay-off came when a policeman came to rent the house in answer to a newspaper ad and a moving van stopped to take the furniture. "This does it," the housewife announced, exasperated. "I'm not answering the telephone or the door, and I'm taking the children out."

• • •

CAN YOU TOP THIS? PART II. Editors of the *Commonwealth Telephone Company News*, Madison, Wis., challenged any pair of telephone personnel in the United States to beat the joint 91-year service record of two of their employes in this column July 24. Thus far, the challengers are the Rochester (N. Y.) Telephone Corp. and the Mutual Telephone Co. of Honolulu, Hawaii, according to recently received letters.

William Culliton was engaged by the Rochester corporation Nov. 15, 1899. He does PBX and station repairing and has a total of 48 years and eight months of service. Bailey Stewart, engaged Sept. 14, 1901, has a record of 47 years and 11 months as a PBX and station installation man. Their combined length of service is 96 years and seven months.

Champions—until some other pair can beat them—are Frank Aki, troubleman in Oahu, and Elizabeth Haaheo, counter cashier. Mr. Aki joined the Mutual company on Jan. 15, 1895, and Miss Haaheo has been an active employe since Jan. 1, 1898. Their joint service record amounts to 101 years.

• • •

THE OTHER FELLA'S JOB. Deanna Durbin's latest film role is that of a switchboard operator, and she wants to form an "Always Be Courteous to Operators" club as a result of it.

"I never realized," she said, "the manual dexterity, sharp wits and tact required of an operator. Never again will I be able to witness anyone being impatient or discourteous with an operator without shuddering."

Miss Durbin was trained in the complex tasks of an operator in preparation for her performance as a White House switchboard operator in "Washington Girl."

• • •

BEWARE, TAKE CARE . . . Perhaps the most elaborately burglar-proofed home in the nation is said to be that of an inventor, W. F. Moore, in Cairo, Mich. Mr. Moore has rigged up a set of gadgets that would discourage or at least frighten the wits out of even the hardiest housebreaker.

Should anyone try to enter the premises at night, he'd set off a chain reaction that would turn on every light in the house, lock the doors to every room, signal the telephone company, summon the town marshal, and set 21 other telephones ringing.

Nobody's tried it yet.

TELEPHONY

The Journal of the Telephone Industry

August 28, 1948

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608 S. Dearborn St., CHICAGO (5), Ill.
U. S. A.

CABLE Ssplicing

By DANIEL SEITZ
Cable Superintendent
York (Pa.) Telephone & Telegraph Co.

IN THIS installment of this series of articles, each step in the making of a splice will be explained in detail by the use of appropriate photographs. It is believed that this "blow by blow" description will clarify the usual difficulties encountered by a beginner in the art of cable splicing.

First operation *(Fig. 1)*. Bind the cable to the lead sheath with two or three wraps of one-inch braid or muslin and secure it firmly by making a slip tie. Then tuck part of the binding under the sheath with a blunt tool. Next, remove the paper tape and separate the wires according to color groups in each direction and tie them with splicing-out wire or muslin.

PART IV. The third part of this series appeared in the Apr. 24 issue, page 21.

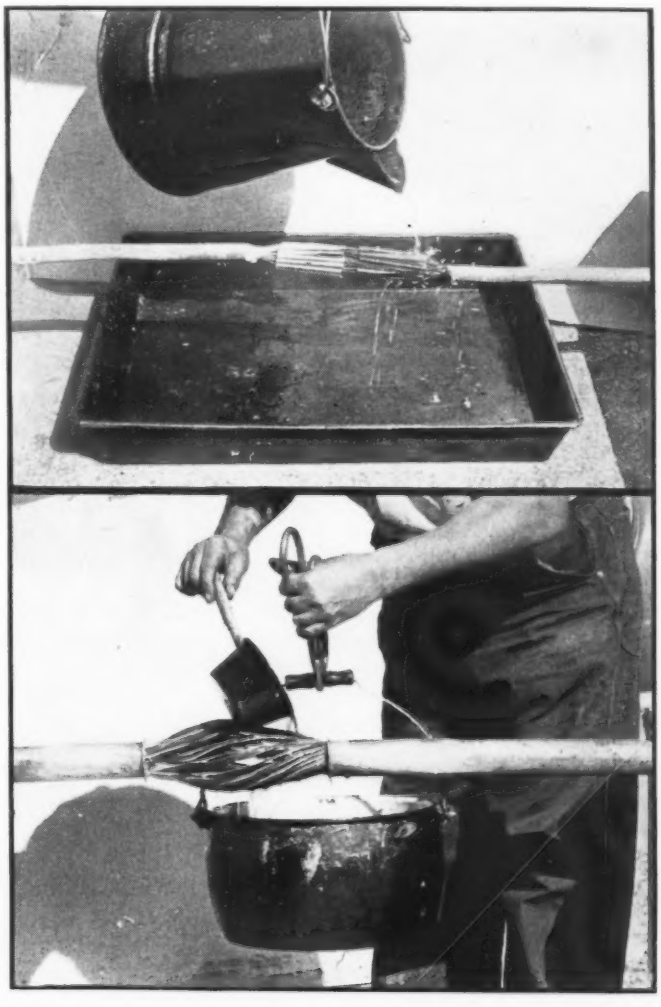
Two methods of applying paraffin are shown in *Fig. 2*. With either method, the paraffin should be heated to a temperature of 375° F. and never over 390° F. Paraffin applied to the paper insulation at higher than 390° F., will seriously damage it. To make certain that the temperature is correct use a thermometer designed for this purpose *(See Fig. 3)*.

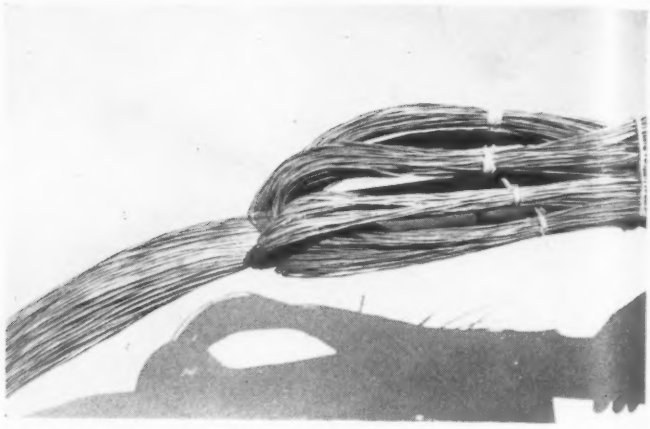
Boil out the cable by starting to pour the hot paraffin over the lead sheath about six inches back from the end and gradually move out onto the paper insulation, continuing to the end

(Upper left) Fig. 1. Tuck tape or muslin end of sheath.

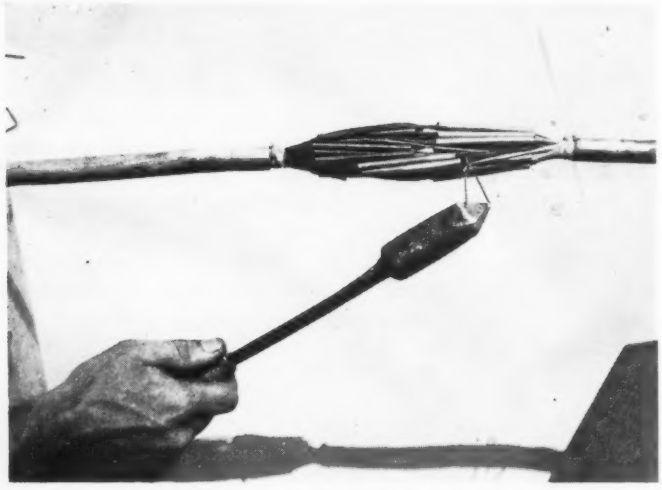
(Lower left) Fig. 3. Use thermometer to read temperature of paraffin.

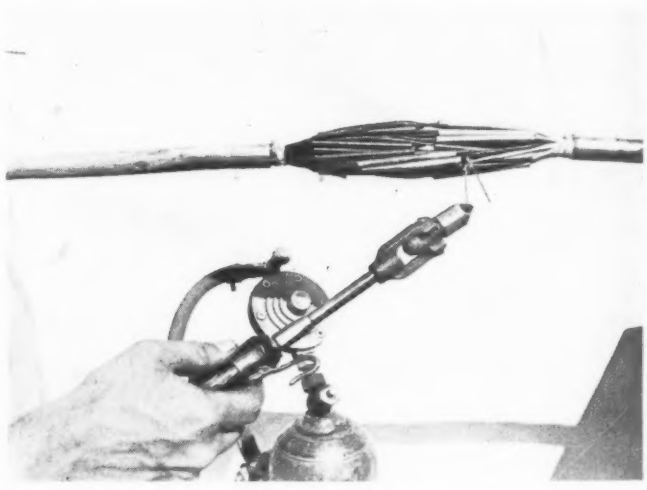
(Right) Fig. 2. Two methods of boiling out cable.





(Left) Fig. 4. Pouring dessicant into completed splice. (Right) Fig. 5. Pairs laid back in color groups.





(Left) Fig. 6A. Soldering cable pairs. (Right) Fig. 6B. Soldering cable pairs with acetylene heated iron.

of the wires. Boiling out with paraffin will facilitate the removal of the paper insulation later when splicing.

This boiling out process should be repeated after the splicing of each 200 pairs in large cables to remove moisture that has been absorbed by the insulation from the splicer's hands or from dampness in the air.

An alternate method is to use desiccant as a drying agent, in which case the pairs are spliced dry (without paraffin) and desiccant is applied when the splice is completed, as shown in *Fig. 4*. When excessive moisture is present, desiccant should be applied from time to time during the splicing operation in the same manner as used after the splice is completed.

Next prepare a lead sleeve of the proper size by cleaning three inches of each end with a shave hook or wire brush. Then coat thoroughly with stearine and slip over either end of the cable to be spliced.

If there is a possibility that considerable time will elapse before the sleeve is placed over the splice and the wiped joint made, wrap the cleaned portion with muslin for protection.

Now fold the pairs back in both directions as shown in *Fig. 5*. In cold weather, if paraffin is used to boil out the pairs, care should be exercised not to bend the wires sharply for this will break the insulation and cause insulation failures later.

We are now ready to begin the actual splicing operation of the pairs, which is executed as follows (See 18 photos on pages 19 and 20):

Step 1. Select a pair from the left end of splice with the right hand and a pair from the right end of the splice with the left hand.

Step 2. Leave enough slack on the far side of the splice, gradually diminishing the slack as each pair is spliced until the center or core of the cable is reached to insure a symmetrically completed splice.

Step 3. Give the wires a sharp half turn.

Step 4. Cut both pairs at same time. Leave about six-inch ends.

Step 5. Remove the insulation. When paraffin is used, shears may not be necessary.

Step 6. Slip the tubes over both wires at the same time.

Step 7. Splice color to color. Start by crossing the two wires and giving them a half turn, then form crank.

Step 8. Crank the splice until a connection about 1½ ins. long is formed.

Step 9. Cut wires so that pigtail will be 1½ to two inches long.

Step 10. Bend the pigtail back along the wire and slip tube, being careful to center the splice within the tube.

Step 11. Splice mate wire same as first wire.

Step 12. Finish the pair by placing tube over splice.

Step 13. When possible, have helper slip tubes on pairs first. A group on one end of the splice, then the other.

Step 14. Splicing when tubes have been placed by the helper. (Note how shears are held while splicing.)

Step 15. On a small splice, where three or less rows of tubes are used, care must be exercised to distribute the tubes evenly.

Step 16. Making a stub or back splice. The two wires being spliced are one on each side of the fore finger.

Step 17. Crank the wires in the same

manner as when making a straight splice.

Step 18. Bend the pigtail back and slip on tube.

When splicing aerial cable of 100 pairs, or larger, the splice may be started from the core or center, working out on each side. This method does not require any slack to be cut into the pairs as is the case when the splice is begun from the side.

By the use of this method of splicing, the helper may gain some useful experience, under the supervision of the splicer, after the splice is under way and before the helper's service is needed for heating the wiping metal, etc.

The removal of pulp insulation may be facilitated by applying a coat of splicing oil with a brush in the area where the pair is to be spliced. Use only enough oil to saturate the insulation of the conductors for two or three inches where the actual splice is located.

The boiling-out process should be continued just as long as there is a crackling noise, caused by the hot paraffin coming in contact with the moisture in the paper insulation.

Some splicers, instead of picking up two sleeves for each pair spliced, prefer to hold a number of sleeves in their left hand, thus eliminating all unnecessary movement of the hands.

During warm weather there is always a possibility that moisture from the splicer's hands may be absorbed by the sleeves. However, if care is taken in the drying of the splice before the lead sleeve is wiped in place, no harm will be caused.

Always make certain that the individual pairs do not become untwisted while getting them ready for splicing. This action also may occur when the helper slips the tubes for the splicer unless a reasonable amount of care is taken. When this precaution is overlooked, split pairs may be found in the completed splice.

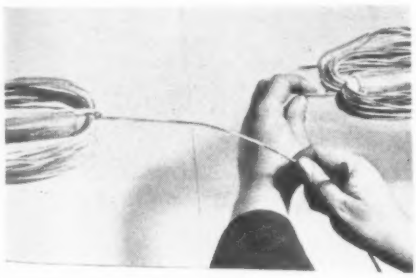
Cotton sleeves or sleeving should always be boiled out in clean paraffin. It is important that the sleeving be prevented from touching the bottom or sides of the paraffin pot. Remove the sleeving from the spool and form into a loose skein or hank before placing in paraffin. Keep the sleeving suspended in the hot paraffin (375° F.) until the crackling noise ceases, after which time remove and shake off the excess paraffin. When the sleeving has cooled, cut to length and open it with the proper sized punch.

If the sleeves are received cut to length, dry boil them in hot paraffin before using. Then the boiled sleeves should be stored in a tight, clean container, ready for use.

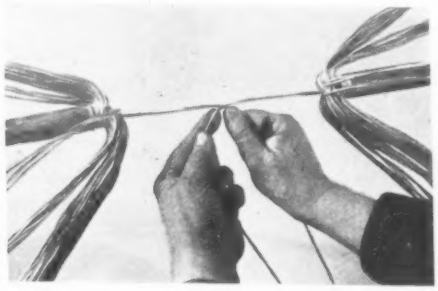
Boil out all muslin before using by rolling it loosely and following the same methods and precautions as for cotton sleeving.

The following table gives the size sleeves most suitable for standard wire gauges used in telephone cable:

Gauge Wire	Type of Splice and Sleeve Material					
	Straight Paper	Bridged Paper	Butt Paper	Straight Cotton	Bridged Cotton	Butt Cotton
No. 26.....	Dia. 3/32	Dia. 1/8	Dia. 3/32	Dia. 1/8	Dia. 1/8	Dia. 1/8
No. 24.....	Dia. 3/32	Dia. 1/8	Dia. 3/32	Dia. 1/8	Dia. 1/8	Dia. 1/8
No. 22.....	Dia. 3/32	Dia. 1/8	Dia. 1/8	Dia. 3/32	Dia. 3/32	Dia. 3/32
No. 19.....	Dia. 5/32	Dia. 5/32	Dia. 5/32	Dia. 3/32	Dia. 1/4	Dia. 3/32
No. 16.....	Dia. 1/4	Dia. 1/4	Dia. 1/4	Dia. 1/4	Dia. 1/4	Dia. 1/4
No. 13.....	Dia. 1/4	Dia. 1/4	Dia. 1/4	Dia. 1/4	Dia. 1/4	Dia. 1/4

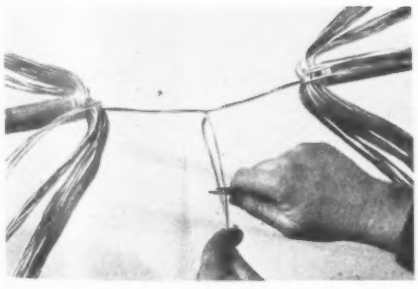


Step 1



Step 2

Step 3



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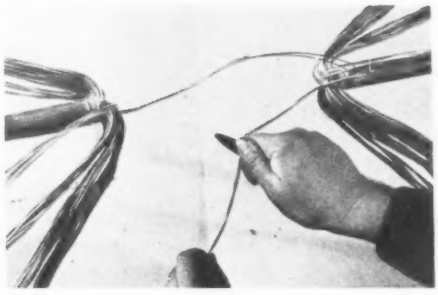
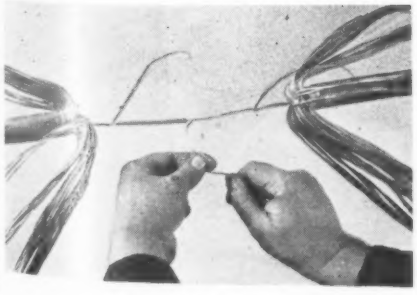


Step 5

Step 6



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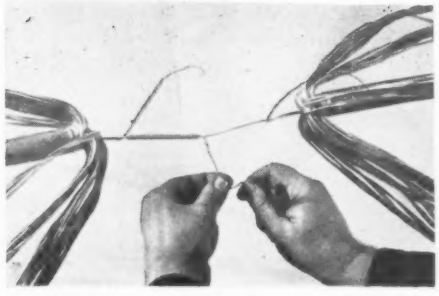

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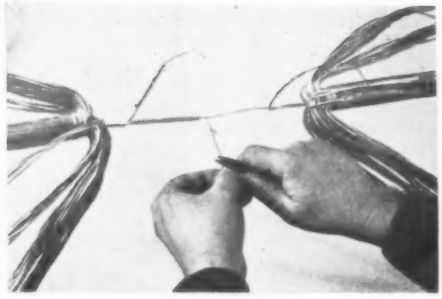

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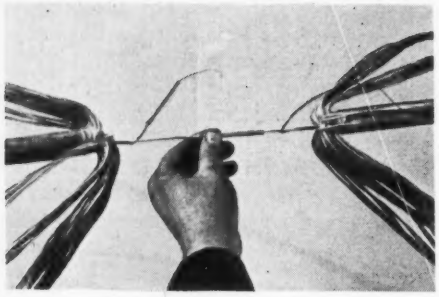

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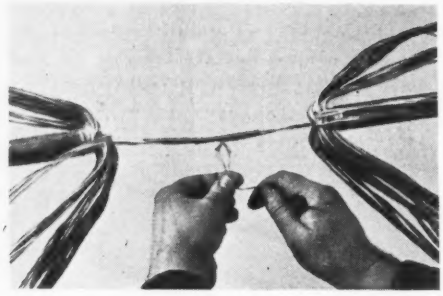

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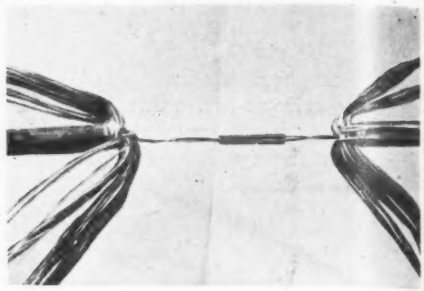

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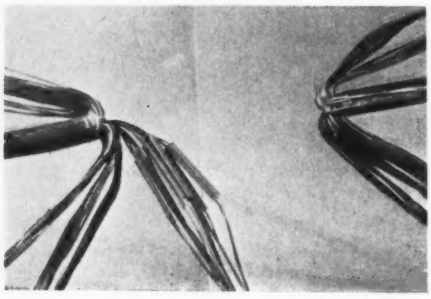
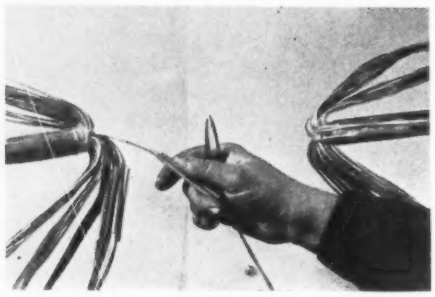


Step 13



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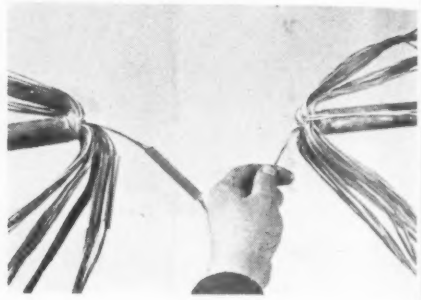

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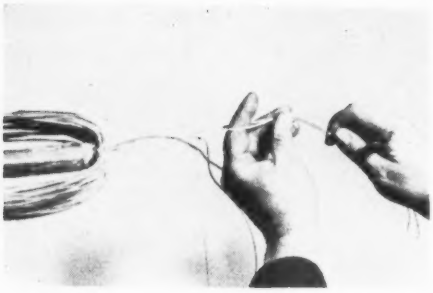

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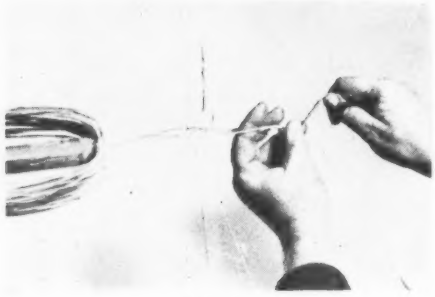


Step 17

Step 18

All paper sleeves should be three inches long.

All cotton sleeves should be 3½ inches long before punching.

All joints in pairs for toll service should be soldered regardless of gauge or size cable. The type of joints for use in exchange and combination cables are indicated below:

Gauge	Type Joint
26 to 26	Twisted
24 to 24	Twisted
22 to 22	Twisted
26 to 24	Twisted
24 to 22	Twisted
26 to 19	Twisted and soldered
26 to 16	Twisted and soldered
26 to 13	Twisted and soldered
24 to 19	Twisted and soldered
24 to 16	Twisted and soldered
24 to 13	Twisted and soldered
22 to 19	Twisted and soldered
22 to 16	Twisted and soldered
22 to 13	Twisted and soldered
19 to 19	Twisted
19 to 16	Twisted and soldered
19 to 13	Twisted and soldered
16 to 16	Sleeve and soldered
16 to 13	Sleeve and soldered
13 to 13	Sleeve and soldered

Fig. 6A shows an approved method of soldering twisted and sleeve joints using a conventional soldering iron heated over a fire pot. *Fig. 6B* shows an acetylene heated iron which is very convenient because the temperature of the copper tip may be held uniformly and at the proper temperature at all times.

Only about one-quarter of an inch at the end of the pigtail splice should be soldered. This will insure a joint without resistance and at the same time it may be opened for test without undue difficulty.

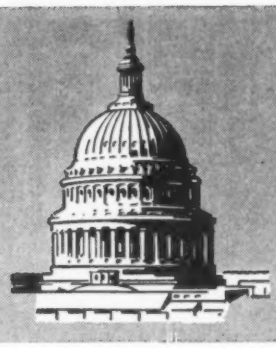
Use only tinned copper sleeves for 16 and 13-gauge wire. Always make certain that they are clean before using. Use resin core solder for soldering the twisted pigtails and copper sleeves. Be sure to remove any excess solder on the bottom of sleeve joints and the ends of the pigtails. Sharp points are sometimes formed by this excess solder which may cause crosses between pairs. After all pairs are spliced, check for any sleeves that may be out of place or do not have sufficient overlap.

If there is excessive moisture present when the splice is completed, apply desiccant to the splice, as indicated in *Fig. 4*, working it thoroughly through the splice so that some of the chemical comes in contact with each wire. Leave the desiccant in the splice about 10 minutes, then remove the excess and discard it. Then add fresh desiccant and wrap the splice with muslin. Do not remove the catch cloth before wrapping with muslin bandage. When using desiccant, the lead sleeve should be one size larger than when boiled out with paraffin. For example, if a two-inch sleeve is specified for use on a paraffin splice, then use a 2½ inch sleeve for a desiccant job.

The amount of the desiccant required varies with the type and size of the cable. An adequate amount of desiccant should be evenly distributed throughout the splice so that all pairs will come in contact with it. Loose core, heavy gauge DWP cables require approximately one gram per pair and small gauge SWP cables, such as 22 and 24-gauge exchange cables, one-fifth grams per pair. For example, a 100-pair, 16-gauge DWP cable requires 100 grams; 100-pair, 24-gauge SWP cable requires 20 grams.

(Please turn to page 33)

COURTS and COMMISSIONS



Statements of two state commissioners—Maltbie of New York and Marshall of Michigan—concerning the need of utilities for increased income to meet inflationary costs commended. . . . Beirne's suggestion that commissions extend jurisdiction to consider wages paid to telephone workers questioned.

ACTION may speak louder than words—as the old saying goes—but it is also comforting to have encouraging words as well, when one is in a difficult situation. The telephone industry today is admittedly in such a trying position as evidenced by the numerous rate increase petitions approved or pending throughout the nation. The fact that these applications have been granted in large part shows that state commissioners, or most of them, are prepared to act in an economic emergency to assist telephone companies in the form of granting rate relief.

But not often do we hear of state commissioners generalizing on the subject of need for granting higher rates. This is perfectly understandable, since state commissioners are either elected to office or subject to political appointment by the governor. This means that they are unlikely to take unnecessary risks with their own political fortune by crusading for unpopular causes or by unnecessarily sticking out their necks. Needless to say, no public utility rate increase, however necessary on its own merits, is popular.

All of which makes it interesting when individual commissioners *do* voluntarily talk about the need for higher rates. It was the New York Public Service Commission — one which has been notably active in forcing down utility rates for more than a decade—that joined in a report for the year 1947 which was recently made public. The report stated in part:

"The inflationary tendencies which became increasingly manifest in the latter part of 1946 and continued at an accelerated rate throughout 1947, outstripped the economies and savings that the utilities had put into effect in recent years under guidance of the commission and many of the companies were compelled to seek increased rates during the year.

"In many instances the companies faced a financial emergency and the commission had to give consideration to the fact that continued operating deficits might have an adverse effect upon the quality and safety of service. Nevertheless, in each instance where increased rates were sought, the commission suspended the company's proposals and instituted an investigation to determine the extent to which operating costs had increased and the amount of relief that should be granted. Where it was found, after public hearings, that the company's condition, due to increased wages and materials, justified the necessity of higher revenues, the commission granted increases on an interim basis for a period not exceeding one year and the proceedings are being continued to a final determination.

"On behalf of the utilities it is said that they are entitled to higher rates because of increased wages, cost of materials, and mounting local and federal taxes. In the years since 1940, increases in wages and other costs were offset to some extent by economies insisted upon by the commission. However, a point has been reached where these mounting costs can no longer be ignored. Wages cannot be continually increased without an increase in the cost of utility service. In most instances, utilities, like other business enterprises, have undergone three rounds of wage increases. In the case of private business and industry, the full amount of a wage increase is generally passed on to the public. In the case of regulated utilities, however, their claims should be scrutinized before consumers are required to pay higher rates and they should be passed on to the public only to the extent necessary to produce reasonable rates."

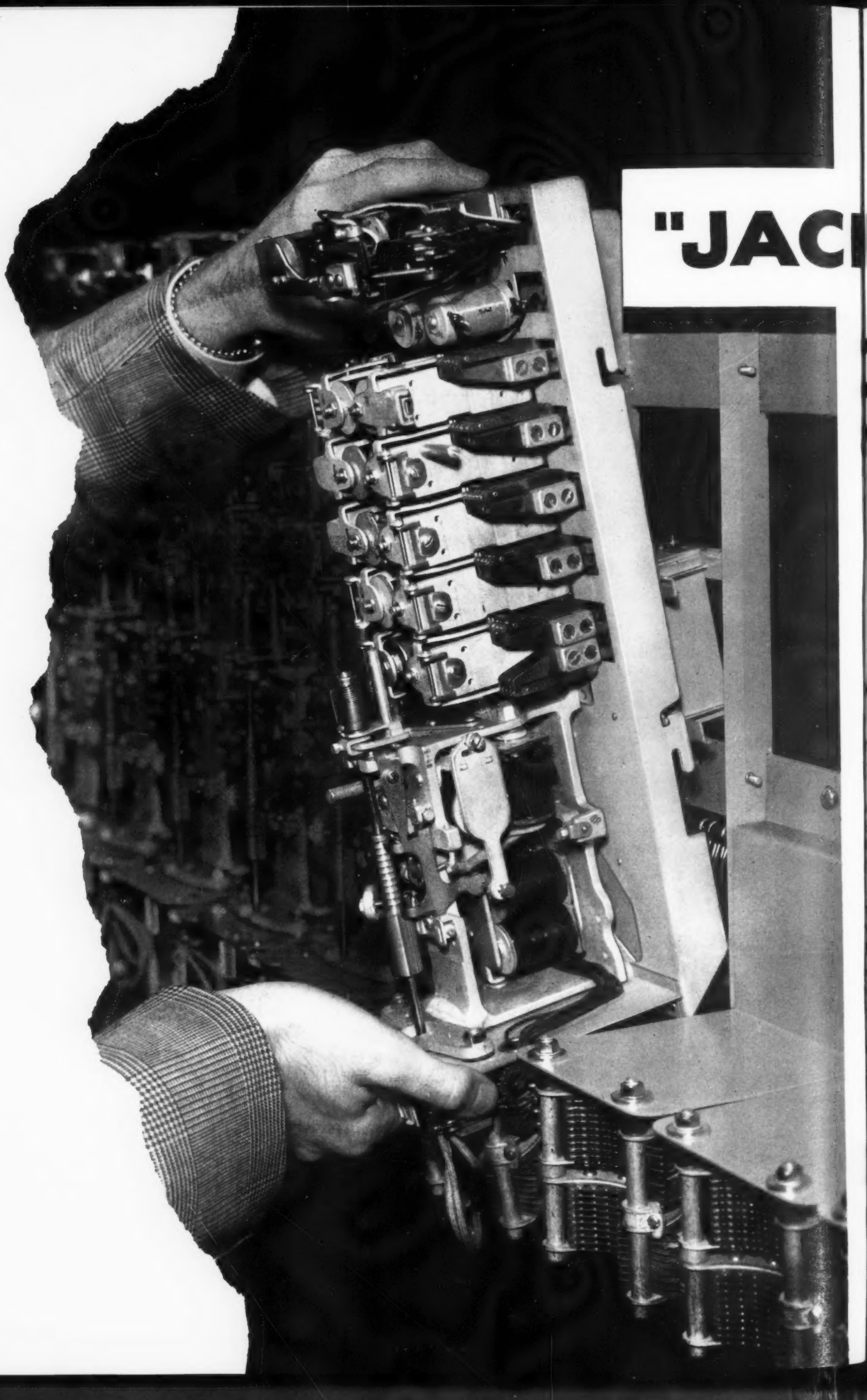
The report went on to say that "for the first time in 17 years increases in utility rates outstripped reductions in 1947." The New York commission further observed that "For years during and immediately after the war, utility services in this state constituted the most formidable barrier against the inflationary tide and while prices of most commodities and services rose rapidly, the rates of practically all utility services under jurisdictions of this commission declined with important savings to the public."

This somewhat courageous statement from the New York commission finds a hearty echo in an equally forthright and voluntary statement by Commissioner Schuyler L. Marshall of the Michigan Public Service Commission. It was made from the bench during a hearing on an application by the Moore Telephone Co. (Independent) for increased rates. Commissioner Marshall was sitting alone on the case at the time and was, therefore, serving in the capacity as chairman.

His statement came so spontaneously and contained such a penetrating analysis of the position occupied by the typical Independent telephone company today, that this writer takes the liberty of quoting directly from Commissioner Marshall's statement at some length:

"There comes a time when inflation catches up with any kind of business. The average commercial business can immediately pass the effect of higher prices on to its customer. The utility, because it is a regulated monopoly, must wait until its affairs are in bad shape before it can apply to this commission for relief. Then, immediately, the question arises as to whether or not the rates—rate relief—can be given before improvement is made to the plant and the service. It gets back to that simple old question we have all heard about since we were children as to whether the egg or the hen came first.

"Here is a company, based upon the evidence given here today and based upon the observations of this commission, which is making an honest effort to improve the services within its territory. I quite appreciate that to anyone living in its territory it may seem that the progress has been altogether too slow, but the telephone business by its very nature is one that cannot be rehabilitated overnight, and I think that consideration and cooperation of this commission will be given to any small company which appears to be making an honest effort to improve its services within its territory and by its past recent history has indicated that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When your equipment is Strowger Automatic, you benefit full from small-unit, "jack-in" design. Each Strowger con- selector, linefinder or other equipment unit is assembled individual base, ready to place on the switchboard frame.

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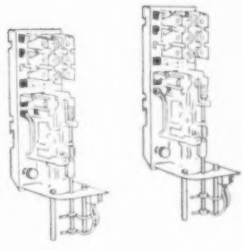
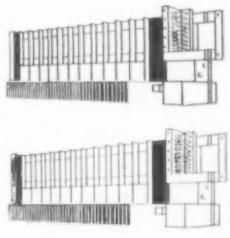
THE 3 *basic* STROWGER *units . . .*

Standard switches, each comprising a complete switch mechanism with associated relays — wired, and with wiring terminated on a mounting "jack" on the base.



Standard shelves to provide mounting facilities and switch "jacks," with all wiring complete to a terminal block at the end of each shelf.



Standard frames—rigid, welded-and-bolted steel structures of standardized design, upon which switches and shelves are easily and securely mounted.

it is making such an effort. We will attempt to go along with the company to further improve its service and to get the subscribers in its territory the kind of service they want.

"Repeatedly, we have had testimony in such cases indicating that the public is not so much interested in the extra cost of the service as they are in the service itself.

"I would like to say parenthetically that a regulatory body such as the Michigan Public Service Commission never built a line—a mile of telephone line—it never gave any telephone service; it never created a cubic foot of gas or a kilowatt hour of electricity. It merely has regulatory powers, and it is the purpose of such a commission, in my opinion, to do all it can to promote the kind of service the public wants and at the same time be entirely fair with the utility whose responsibility it is to give that service. Money cannot be obtained by a company where the earnings have disappeared, or nearly disappeared. The public to whom the companies must go for capital to make extensions are just as jealous of where their invested money goes as you and I. They will not knowingly invest in companies that have inadequate earnings for the simple reason that they must wait a long while to get their money back."

The task of the regulatory commissions is frequently complicated by pressures of various kinds to have utility rates reduced or increases blocked. Such pressure comes from groups of substantial numbers and with considerable political weight behind them. It presents a challenge to the fairmindedness and integrity of the individual commissioners to see that justice and equity are done regardless of popularity.

More recently, pressure came from a somewhat unusual quarter in the form of a letter by Joseph A. Beirne written to 34 state commissions asking them to give consideration (in pending and forthcoming rate cases) to the question of whether or not the company whose rates are under review is paying reasonable and adequate wages to its employes.

Mr. Beirne said that state public utility commissions have not only the responsibility for protection of the public in rate matters, but "they are also responsible for seeing that the public has adequate service of a high quality. With poor wages, service deteriorates. If we have to strike, it will deteriorate even more," he said.

This seems to be a rather novel construction of state commissions' responsibility. It is undoubtedly true that the commissions are responsible for the protection of the utility consumers. It also is probably true, although questioned in some quarters, that the commissions have a responsibility for the protection of the utility investor. At any rate, the courts have usually enforced that concept where commissions have refused to give utility companies necessary rate relief, as recently happened in a telephone rate case in Georgia.

But one looks in vain through the various state public service commission laws for any statutory language imposing upon the commissions any duty or responsibility to examine the reasonableness of wages paid by utility companies to their employes. On the contrary, the regulatory commissions generally have left such matters to the discretion of management or to collective bargaining between management and organized labor.

An editorial in the current issue of *Public Utilities Fortnightly* makes an interesting commentary on the question raised by Mr. Beirne. This editorial states in part:

"Mr. Beirne has pitched his plea for regulatory intervention affecting utility employes on a rather novel premise that the commissions must do this in order to insure adequate service for the public. Certainly, most of the state regulatory laws require the respective public utility commissions to see to it that service is adequate.

"Whether many state commissions will agree to this implied extension of the theory of a utility's obligation to serve remains to be seen. Sometime ago President Beirne made a similar plea to several of the state commissions and drew a negative reaction. One state commission chairman even expressed surprise that the union leader would make such a request. But at that time the argument about preserving service standards through supervision of adequate wage levels was not emphasized.

"It is a fair question whether a similar line of reasoning might be taken with respect to other items of operating expenses based on an extension of the theory of a utility's service obligation. Is the company getting the proper equipment and paying enough for it? Has the company made adequate engineering, construction, and other plans for future service? Has the company hired *enough* employes or has it trained them sufficiently well? Such questions, all of which involve what used to be regarded as managerial functions, certainly could affect service to the public in case of a breakdown on any of the items mentioned. Offhand, it would appear that the commissions will have a good many duties to perform if they decide to assume the responsibility for weighing the merits of every managerial decision, regarding every operating expense, ranging from the broad question of wages to whether or not copper or aluminum lines should be used."

One thing that the telephone industry may be obliged to do if operating expenses continue to rise and sufficient rate relief is not available, is to invest more of its own funds in plant. Some large organizations in other lines of industry are contemplating such a course—Robert H. Colley, president of the Atlantic Refining Co.; Gwilym A. Price, president of Westinghouse Electric, and Benjamin F. Fairless, president of United States Corp., just to mention three. These executives have decided to risk the wrath of shareholders to whom they are responsible for their own jobs, by plowing earnings back into plant investment.

In a recent letter to Atlantic Refining Co. shareholders Mr. Colley points out that the oil industry needs new capacity, but it cannot obtain all the capital needed to build new plant and equipment by floating securities. Therefore, Atlantic is expanding on its own power. In the first six months of this year, the company retained almost nine out of every 10 dollars earned. Similarly, Westinghouse Electric retained about seven out of every 10 dollars. In the old days—in 1928 and 1929—it used to be the other way. About six or seven out of every 10 dollars earned would go out to stockholders as dividends.

Mr. Colley explains that the "highly profitable prices paid to the (oil) industry by its consumers may be looked upon as a mandate to the industry to build its capacity to . . . enable it to supply whatever quantities of petroleum are desired."

His judgment that the oil industry must now make up for lost expansion during the war and that higher prices are a mandate for expansion might well be disputed by some economists. They might take the more conventional position that prices are merely an expression of how much the public will pay at the moment and that any indication that corporate management is going to dig into the stockholders' pockets without formal permission (through the suspension of dividends) would seriously undermine the corporation's credit position.

The fact remains that the manager of any large corporation, these days, whether it is in a regulated or unregulated industry, knows that if he were to pay out all available earnings as dividends they could not be lured back for investments for new security issues. The principal reason for this is high taxes and a depressed security market. Whatever the answer to the paradox of a dull stock market during a capital goods boom, the position of the telephone industry at the moment is obviously less fortunate (in regard to earnings) than the oil industry.

Last year, American corporations in general retained 11 out of 17.8 billion dollars of profits—paying out to the shareholders 6.8 billions. Such corpo-

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THE PLANT MAN'S NOTE BOOK

BY
RAY BLAIN
TECHNICAL
EDITOR

WHEN a friend of the writer recently rode the "Congressional" on the Pennsylvania Railroad from New York to Washington, D. C., he found a leaflet in his seat explaining how a telephone call could be made from a private telephone enclosure located in the lounge car. Our friend decided to call his home for the novelty. However, upon inquiry, he was advised that the telephone equipped lounge car had to be cut out of that particular train for repairs and that mobile telephone calls could not be handled.

It would appear that if this type of service is to become popular on trains, it must be available to the public at all times.

• • •

The Raytheon Manufacturing Co., Waltham, Mass., has announced the introduction of a new line of catalog and custom-engineered automatic voltage stabilizers for precision AC line voltage stabilization. Twenty-one years of continuing research and development have resulted in this service-tested line—for which this company claims all the ruggedness and dependability of its old line—but at considerable saving in space and weight. This new automatic stabilizer has no adjustments, no moving parts and no maintenance.

• • •

It has been said: "Oversleeping will never make your dreams come true."

• • •

In the early days of telephony, many telephone directories carried the following notice.

"The morning test call is made for the purpose of ascertaining whether any of the subscribers' lines or instruments are not in working order and require immediate attention. It is an obvious and valuable means for insuring good service. Subscribers who object to answering this call and require its discontinuance are requested to give notice accordingly and the test call upon their especial lines will no longer be made."

Although all this appears ridiculous at the present time, it was undoubtedly necessary in its day and helped make our now excellent telephone service possible.

• • •

At long last we hear of a wire pay out reel which it is claimed cannot get tangled or fouled. This is an all-metal, non-wobble, self-attended reel, equipped with an automatic brake that is operated by the outgoing wire when it tends to run too fast.

This device appears to be a very good idea and should prove not only a labor saver but should prevent damage to the wire as well.

• • •

We are advised by the owner of a small telephone company that he is forced to reuse old poles recovered from the line. He attempts to extend the plant life of these old poles by giving the butts a brush treatment of a preservative before resetting. He is of the opinion that a spray gun of some type could be used to advantage in the application of the preservative to the butts. Such a device would facilitate the work and result in making the treatment more effective than the brush treatment.

To date, however, he has not been able to find a spray gun which would answer his purpose. If any of our readers have had any experience with a similar arrangement, will you please let us hear from you?

• • •

We note that "cat's eye" reflector signs are being used by the Bell Telephone Co. of Canada to point out public telephone locations along highways. These reflector buttons outline the bell shaped sign and an arrow points to the location of the telephone. The word "Telephone" in large letters is located below the bell.

Such a practice, or some similar arrangement, could well become universal for it is always a difficult task to locate a telephone on a strange road late at night.

In all probability, the mobile telephone will eventually solve this problem, but until this type of service comes into general use, there is little doubt but that the reflector signs will serve a real purpose.

• • •

At the present time, telephone companies are doing a marvelous job in supplying telephone service in new housing developments.

We have a report of one case in a new apartment house area that seems almost unbelievable. A power trencher started work along an unpaved street leading into the development on Monday morning. The conduit was installed, cable pulled in and spliced, and several telephones were in operation by Saturday. This, we believe, demonstrates unequivocally the efficiency of present day operating companies.

• • •

It is stated that the Western Electric Co. employs more than 5,000 people in the manufacture of an average of 15,000 telephones a day for the Bell System.

The Hawthorne Works in Chicago has produced over 5,000,000 combination telephone sets during the past two years.

• • •

Considerable comment is frequently heard in certain sections of the country these days concerning telephone wire tapping. One telephone man informed the writer recently that his company had received requests from a few concerns to take all multiple taps from cables serving their telephones. Probably this action has some effect in improving the secrecy of telephone communication, though we seriously doubt it. When an inductive pick-up can be arranged with an amplifier and a small coil, or a short circuit parallel, so that conversations may be clearly heard, why then should professional wire tappers go to the extra trouble of making a physical connection through a multiple cable tap?

Then, too, some individuals who stress the importance of secrecy in telephone communication insist on the use of speech inverters. Although this

equipment may provide some element of privacy, it does not actually provide secrecy for anyone who really has a desire to intercept a telephone message can do so. As a matter of fact, this equipment often gives a user a false feeling of security and may do more harm than good.

Equipment is now available which provides complete telephone security although it is extremely bulky and expensive. Undoubtedly, some day, and probably in the not too distant future, someone will devise a rather simple and not overly expensive device which will provide complete secrecy of telephone communication. Until then, however, the only safe practice to follow is *not* to trust important secrets to commercial telephone systems.

PLANT MAN'S QUIZ

Q. What is the meaning of the term "flash testing" of lead covered telephone cable?

A. Flash tests are made to make certain that all openings have been closed in a splice and/or a short section of cable. This test is made by making a connection to a sleeve and admitting gas for about two minutes at a regulated pressure of about 20 pounds per square inch. Then with the gas still connected, cover the sleeve and cable under test with a standard soap solution. Maintain a back pressure of at least seven pounds on the gauge and examine the sleeve and sheath for escaping gas which will be evidenced by soap bubbles.

When this test is used in a manhole on an underground cable, it may be necessary to use a small hand mirror to inspect the under-side. When openings are found, release the gas pressure, repair them, and retest.

• • •

Q. We are severely handicapped in our little exchange due to the fact that we do not have a qualified cable splicer. Our lineman can splice the conductors satisfactorily, but has not been able to master the art of wiping a lead joint. Is there any method of successfully closing a cable joint without the use of hot lead?

A. Years of experience have proved that hot lead is the most effective method of sealing an opening in a lead covered cable. This does not mean, however, that the hot lead must necessarily be wiped onto the cable. The carbon electrode method has been found highly successful for closing cracks and other small openings in lead sheath. This tool can be used to close a sleeve joint, but is not generally recommended for this purpose.

The carbon electrode as used with this method closes an electrical circuit on the lead sheath. The arc heats the lead and melts stearine core solder to close the opening. The acetylene torch can also be used to advantage in closing sheath openings and, in the hands of a skilled operator, may solder a sleeve onto cable and thus avoid the wiping of joints. It must be remembered, however, that neither the arc nor the torch should ever be used in a manhole or other confined space where gas may be present.

When using either of these methods, it is necessary to make certain that the surfaces to be soldered are cleaned thoroughly and well covered with stearine. Then, heat the sheath properly before applying the solder. An old cable splicer once told the writer that the wiping of lead joints is never difficult if approached in a proper manner. He recommended that the sheath at the point of the wipe be thoroughly cleaned and protected with stearine. Then it should be heated to the correct temperature. The next step is to pour on the properly heated metal and try desperately to wipe it all off the joint. He contended that sufficient metal would adhere to the point where the sleeve contacted the lead sheath to close the joint. That was many years before the so-called "Victory" joint brought about by the scarcities of war, but now we all know that a small wiped joint is often better than one where the metal is heaped up on the sleeve and cable.

• • •

Q. Which type of drop wire, parallel or twisted pair, is considered the best suited for exchange construction?

A. Twisted pair drop wire is generally considered to have a longer life in damp, humid climates. It is higher, also, in cost than parallel type wire.

The life of either type is shortened considerably when drops contact tree foliage.

While parallel wire is more convenient to use in drop wire clamps and clips, twisted pair wire may, however, also be so used in this manner if care is taken to avoid wire crosses inside the clamp.

Q. Is the practice of painting the outer braid of old drop wire considered economical?

A. Due to the critical wire shortage during the war years, an attempt was made to extend the useful life of old drop wire by repainting the outer braid. A machine was devised that could be pulled along a drop wire and give it a coat of suitable paint. This, at best, was a messy job and was considered by many to have doubtful value.

Actually, in most cases, old drop wire generally goes bad at the ties, clamps or where it contacts a tree.

We have not had a report of anyone painting drop wire during the past several years. The present-day drop wire has an outer braid covering far superior to that used a few years ago and should provide maximum life and service with the usual precaution of using proper clamps, stringing to proper tension and maintaining a good tree clearance.

• • •

Q. What type of paint should be used on a concrete floor of a basement terminal room?

A. Various rubber base paints are recommended for this purpose. It is suggested, however, that you consider asphalt tile for this purpose. This type of tile will prove better and last longer than any type of concrete paint which, at best, is never entirely successful. Moreover, tile will probably prove more economical in the long run.

• • •

Q. Why is it necessary to place an insulated joint in lead covered telephone cable?

A. Insulated joints are used at all points where it is necessary to break the electrical continuity of the cable sheath to prevent the flow of foreign currents along the cable sheath. These breaks are generally used to prevent the flow of currents along cables that enter buildings and aerial and underground cables that enter central offices.

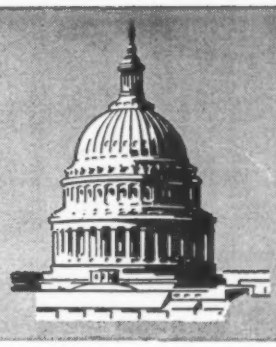
• • •

Q. What is the maximum loop resistance that can be used between stations on a loud speaker type telephone intercommunication system?

A. This will depend primarily upon the type of system used. One high level system, that is, when the amplifiers are located at the transmitting end, specifies a 50 ohm loop.

With the zero level system, when the amplifiers are located at the receiving end, a considerably higher resistance loop may be used.

COURTS and COMMISSIONS



Approves Increased Rates For Added Exchange Service

The Nebraska State Railway Commission has authorized the Lincoln (Neb.) Telephone & Telegraph Co. to increase rates at its Shelby exchange, where more than the required number of subscribers have asked for added exchange service to Osceola, the county seat, agreeing to pay the schedule of charges fixed for Class C exchanges.

Business rates increased are: Individual, from $4.25 to $4.75; two party, from $3.50 to $4.00. Residence, one party, from $2.50 to $2.75; party, from $2.00 to $2.25.

Rural rates of $2.25 are unaffected, being the same in both classifications.

V V

Extra Day Granted in Massachusetts Rate Inquiry

Since members of the state legislature have declared their inability to attend a telephone rate hearing Sept. 14, because of primary elections, the Massachusetts Department of Public Utilities also has set Sept. 15 as an additional hearing date. The legislators desired a postponement of the hearing, but the commission refused. The inquiry is into a proposed 10 per cent rise in rates of the New England Telephone & Telegraph Co. (TELEPHONY, June 26, p. 30).

V V

Ordered to File Interim Rates, Pending End of Investigation

The Michigan Associated Telephone Co., Muskegon, has been ordered to prepare and submit for approval and filing temporary or interim rates, pending the conclusion of the Michigan Public Service Commission investigation of its recent rate application (TELEPHONY, May 1, p. 25).

In its petition the company pointed out that:

(1) It has constantly sought to maintain and furnish the highest possible grade of service to its subscribers, has installed from time to time more efficient equipment, facilities and operating practices, and has substantially increased the number of stations that can be reached by subscribers' telephones, as a result of which there has been a steady increase in the value of the applicant's services at no increased cost to its subscribers for a period of years.

(2) By reason of its more extensive facilities, total operating revenues increased from $1,611,840 in 1941 to $2,990,133 in 1947, an increase of 85.5 per cent; that during the same period, operating expenses and taxes increased from $1,185,113 in 1941 to $2,663,668 in 1947, an increase of 124.76 per cent. As a result, net operating income decreased from $426,727 in 1941 to $326,-465 in 1947, while during the same period there was a large increase in its capital investments.

(3) In the face of existing conditions it has made every possible effort to provide its subscribers with good telephone service. Net additions to its telephone plant during the period between Dec. 31, 1941 and Dec. 31, 1947 amounted to $2,988,000, the company reported. During the years 1948 and 1949 the company estimates that it will make additional expenditures aggregating $7,500,000 gross for plant and property.

(4) To attract needed additional capital for the maintenance of adequate service and to supply the additions and extensions, its earnings must be such as to yield a reasonable return upon its investment.

The company has proposed a new schedule of general rates for miscellaneous facilities and services and two new local rate schedules, one of which it has termed "interim group rates" and the other "objective group rates." According to the company's suggestion, the "interim group rates" would be made immediately effective at all of its non-dial exchanges and the "objective group rates" immediately effective at its dial exchanges. When and as the non-dial exchanges are converted to dial operation, the "objective group rates" would be made effective.

The immediate result of the application of the proposed rates, according to the commission, would be to increase local exchange revenues $625,683 upon an annual basis. Within the year 1948, upon conversion to dial operation of five exchanges, an additional $2,326 also would be made available to the company.

The Michigan Associated provides service through 72 exchanges in 27 counties. As of Dec. 31, 1947, it operated 64,059 company-owned telephones and 742 subscriber-owned instruments.

If the proposed rates are approved, approximately $342,000 in gross revenue upon an annual basis will be returned to the company.

V V

Orders Company to Cut Proposed Rates

The Missouri Public Service Commission on Aug. 14 rejected as too high a proposed schedule of rates filed by the New London (Mo.) Telephone Co.

The company, serving 445 stations, was ordered to adjust the rate schedule to provide a $2,000 increase in revenue in place of the $2,490 increase which the commission found would result from the rates proposed by the company.

V V

Forest Green, Mo., Company Sold to Johnmeyer

The Forest Green (Mo.) Telephone Co. has been purchased by the Johnmeyer Construction Co. The exchange, which had been under mutual ownership of farmers in the area, now has 125 subscribers. The change in management was effective Aug. 1.

Plans are being made to rebuild the entire line as soon as possible, according to Julius Johnmeyer. No change in personnel at Forest Green is contemplated, he said.

V V

Ordered to File Rate Sheets

The Michigan Public Service Commission has ordered the Moore Telephone Exchange System, Inc., Caro, to file rate sheets in conformance with those attached to its petition for higher rates at its Caro and Marlette

exchanges. The company was further ordered to report at 60 day intervals concerning the progress in the conversion of the Marlette exchange to dial and of relieving crowded party lines at both of its exchanges.

V V

Approves Reclassification

Reclassification of its telephone plant accounts has been approved for the Commonwealth Telephone Co., Forty-Fort, according to a recent order of the Pennsylvania Public Service Commission.

V V

Summary of Commission Rulings and Hearings

California Public Utilities Commission

Aug. 2: Orders authorizing Pacific Telephone & Telegraph Co. to sell $75,000,000 of debentures, and the Associated Telephone Co., Ltd., Santa Monica, to sell 85,000 shares of common stock and 85,000 shares of preferred stock, $20 par value.

Aug. 9: Hearing on application of Pacific Telephone & Telegraph Co. to discontinue operation of its Elmira exchange; supplemental order authorizing amendment to Decision 41416 regarding authority of company to increase intrastate rates.

Kansas Corporation Commission

Sept. 7: Hearing on complaint against East Kansas Telephone Co., Nortonville, by Edmund Theis *et al* charging inadequate service, increased rates, and change of system without notice to subscribers.

Sept. 13: Hearing on application of Lane (Kan.) Telephone Co. for authority to change rates.

Sept. 13: Hearings on applications of A.&P. Cooperative Telephone Co. Inc., Abbyville, for permission to transfer its franchise and to cease operating at Abbyville and Plevna; and of J. J. Gagnebin, John Wagler and Frank Connery for permission to operate a telephone company in the same territory.

Sept. 13: Hearing on application of Farmers & Citizens Telephone Co., Munden, for authority to change rates.

Sept. 20: Hearings on rate applications of: (1) D. Monroe Cobb, Partridge; (2) Farmers Mutual Telephone Co., Wakefield, for Manchester.

Minnesota Railroad & Warehouse Commission

Sept. 1: Hearing on application of Sam Burton *et al* for permission to discontinue service rendered them by the Hastings (Minn.) Telephone Co. and to be served by the Northwestern Bell Telephone Co.

Sept. 22: Hearing on application of Deer River (Minn.) Telephone Co. for authority to change rates.

Oklahoma Corporation Commission

Sept. 2: Hearing on application of Harry D. Moreland, Tulsa, for order requiring the Southwestern Bell Telephone Co. to continue serving him.

Sept. 7: Hearings on application of Wayne residents for automatic dial exchange installation by the Southwestern States Telephone Co., Brownwood, Tex.

Sept. 8: Continued hearing on application of Moore residents, requesting that the Southwestern States Telephone Co., Brownwood, Tex., be required to give adequate service.

Sept. 8: Date on which commission requires service of Bokchito (Okla.) Telephone Co. to be in good condition.

Sept. 9, 10, 21, 22, and 23: Hearing on evidence contesting application of Southwestern Bell Telephone Co. for increased intrastate exchange rates in Oklahoma.

Sept. 17: Hearing on application of E. K. Cross Telephone Co., Webber Falls, for permission to increase rates.

Oct. 1: Continued hearing on application of Southwestern Bell Telephone Co., Southwestern Associated Telephone Co., Lubbock, Tex., Southwestern States Telephone Co., Brownwood, Tex., and Oklahoma Telephone Co., Broken Arrow, for continuance of rules similar to those of expired federal regulation U-2 governing order of service installation.

Oct. 1: Hearing on application involving boundary lines between territory of the Southwestern Bell Telephone Co.'s Tulsa exchange and the Oklahoma Telephone Co.'s exchange at Broken Arrow.

Pennsylvania Public Utility Commission

Aug. 24: Continued investigation of rates, charges and service of the Bell Telephone Co. of Pennsylvania in the exchange area of the Pittsburgh district to determine whether they are in violation of the public utility law.

V V

Changes to Dial Operation

The Southeast Nebraska Telephone Co., Falls City, has completed the conversion to automatic operation of its exchanges at Rulo, Salem and Verdon, and has placed an order for October delivery of equipment for those at Stella and Shubert. This will leave Falls City, its main exchange, and Barada, still to be converted.

HAPPINESS

by
L. D. CAVANAUGH
President
Federal Life Insurance Co.

HAPPINESS is a state of mind, so it would seem that those who strive to attain the greatest degree of happiness should give themselves a mental analysis in an effort to discover what it is that produces that particular state of mind for them.

It is my personal opinion that no two people reach the mental state of happiness through the same process or causes. In other words, certain factors, causes or events which would make one person happy, might have just the opposite effect with another.

If this premise is correct, then it would seem that the individual himself is the only person in a position to figure out what is required in his particular case to bring about a mental state of happiness.

Frankly, there appears to be ample evidence that there are many who spend their entire life seeking happiness, but fail to find it, probably because they do not know just what they are seeking.

From all indications there are different degrees of happiness or sadness, as the case may be as between different individuals. Furthermore, a person may give you the impression of being very happy when he actually may be sad, and vice-versa.

Approaching this subject from a self-analysis basis, I have developed a brief pattern of fundamentals to my individual happiness:

(1) A clear conscience;

(2) An appreciation of the fact that throughout my life, I have not only the responsibility, but the opportunity, unselfishly to serve my God, my Country and my fellowman;

(3) An understanding of the real meaning of the expression, "it is more blessed to give, than to receive;"

(4) To practice the Golden Rule in all business and social relationships;

(5) To be kind, considerate and helpful to all, but especially to those handicapped, who tread life's highway with you;

(6) To recognize the fact that material wealth is not a synonym for happiness; money is a commodity, it will not buy health or happiness, neither will it serve as a passport to heaven.

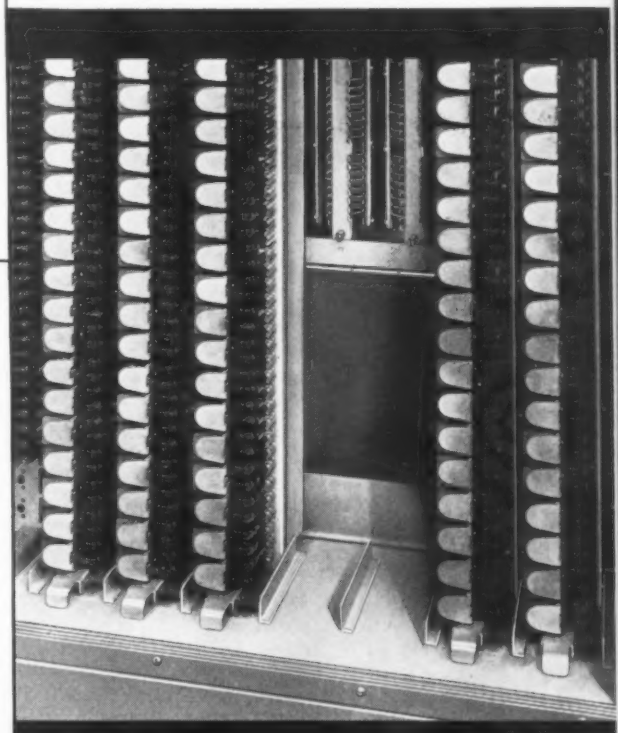
In conclusion, let me quote a few words as I remember them from a song I learned many years ago:

"You will find that happiness lies right under your eyes, right in your own backyard."

1

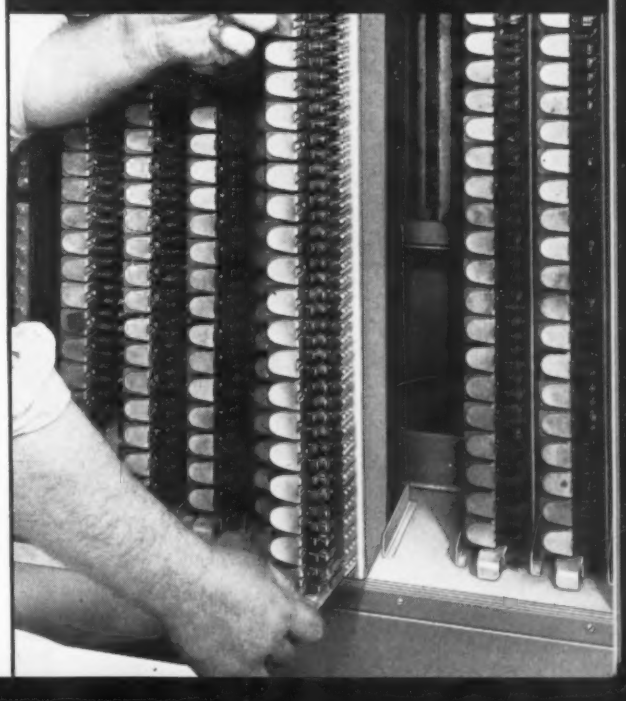
The line and cut-off relays for 10 additional lines are combined in a single relay bar. This comes from the factory in a single carton, wired, tested, ready to be installed. They are always in stock for immediate shipment.

2



This shows the section of the Leich Dial System where the line relay bars are jacked-in. Every 100 line equipment bay is fully wired and has the jacks for plugging in the additional 10 line relay bars.

3

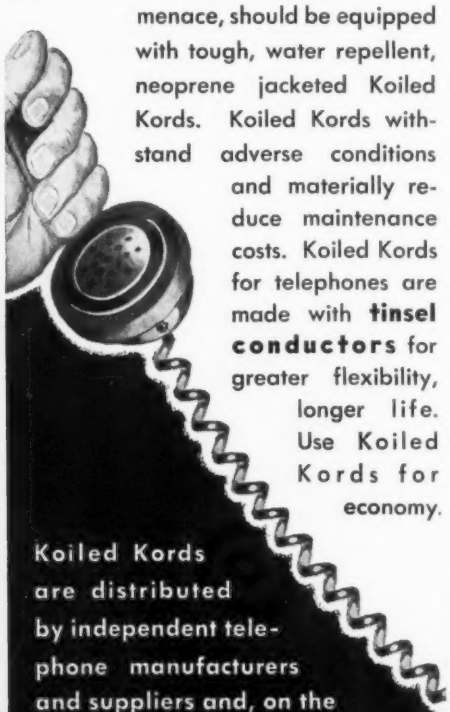


All that's necessary is to take the relay bar unit out of the carton and jack it in as is shown above. That is all there's to it.

NEITHER
STEAM
NOR
RAIN

can hurt
KOILED KORDS

Tropical humidity, steamy plants, sudden rain squalls . . . none of these things can hurt Koiled Kords. Telephones located wherever moisture is a menace, should be equipped with tough, water repellent, neoprene jacketed Koiled Kords. Koiled Kords withstand adverse conditions and materially reduce maintenance costs. Koiled Kords for telephones are made with **tinsel conductors** for greater flexibility, longer life. Use Koiled Kords for economy.



Koiled Kords
are distributed
by independent telephone manufacturers
and suppliers and, on the
West Coast, by the Jewell-Summer Co., Los Angeles, Cal.

Koiled Kords
INCORPORATED
BOX K, HAMDEN, CONN.

Northern Ohio Buys Control Of Ashland Company

Announcement was made recently by William C. Henry, president and general manager of the Northern Ohio Telephone Co., Bellevue, that the company had acquired a controlling interest in the Star Telephone Co., Ashland, Ohio.

In a reorganization of the Star company, Gaylord G. Freer will become assistant general manager and secretary.

The Star company includes 15 exchanges in the Ashland area. Merging of the company with the Northern Ohio company will make the largest independent operating telephone company in the state, according to Mr. Henry, with a total of 66 separate exchanges, more than 62,000 telephones and 5,000 miles of its own toll lines.

V V

Less Impetus to Rising Construction Costs

Since the March issue of The American Appraisal Co. "Construction Cost Index," there has been a rise of eight points in the national average from 478 to 486 which establishes a new high for the index. The rate of increase is diminishing as will be noted from the fact that during the first half of 1947 there was an increase of 46 points in the index, and for the same period in 1948, only 14 points increase.

The modest rise in the second quarter was accounted for by scattered increases in labor rates in some building trades in various cities and a general increase in labor rates in the Los Angeles area.

The American Appraisal Co. index is based upon a detailed analysis of materials and labor required for representative types of industrial building structures, repriced monthly in accordance with (1) prevailing wage scales and labor performance for the various building trades, and (2) quotations for construction materials in 30 key cities in the United States. The index assumes normal average conditions and does not give any recognition to overtime or bonus payments to labor or premiums paid for materials in individual cases or under temporary abnormal conditions.

The index applies to construction only and does not include factors for building fixtures and decorations. The index figures are based upon "100" representing 1913 costs.

V V

Elected a SW Bell Officer

L. E. Lattin has been elected a vice president of the Southwestern Bell Telephone Co., according to a recent announcement. He will have general direction of the company's revenue program. Mr. Lattin transferred to the Southwestern company from Cleveland where he was a vice president and director of the Ohio Bell Telephone Co. He entered the telephone business in Omaha in March, 1920, as an accounting clerk.

COMING 1948 CONVENTIONS

Tennessee Independent Telephone Association, New Southern Hotel, Jackson, Sept. 9.

Rocky Mountain Telephone Association, Albany Hotel, Denver, Sept. 16 and 17.

Michigan Independent Telephone Association, Hotel Olds, Lansing, Sept. 23 and 24.

United States Independent Telephone Association, Stevens Hotel, Chicago, Oct. 11, 12 and 13.

South Dakota Telephone Association, Cataract Hotel, Sioux Falls, Oct. 20 and 21.

The North Carolina Independent Telephone Association, Grove Park Inn, Asheville, Oct. 25 and 26.

South Carolina Independent Telephone Association, Wade Hampton Hotel, Columbia, Oct. 28 and 29.

Florida Independent Telephone Association, Orange Blossom Hotel, Sarasota, Nov. 8 and 9.

Virginia Independent Telephone Association, Roanoke Hotel, Nov. 11 and 12.

Missouri Telephone Association, Governor Hotel, Jefferson City, Nov. 15 and 16.

Oklahoma Telephone Association, Huckins Hotel, Oklahoma City, Nov. 18 and 19.

In the Nation's Capital

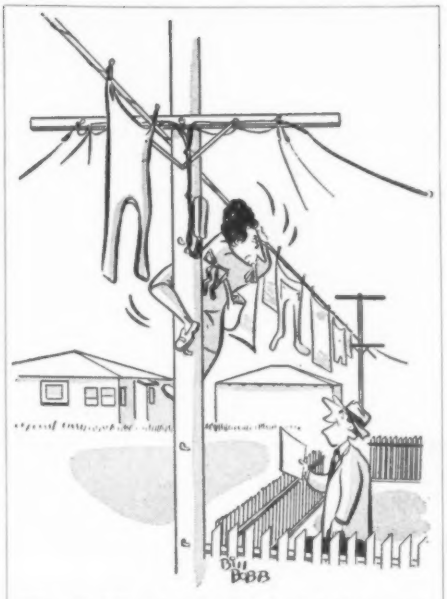
(Concluded from page 24)

rations are now spending about 19 billions on new plant and equipment—an all-time high—compared with eight billion in 1941 and five billion in 1939.

The Bell System has had to guard the credit position of its securities, through a rigidly stabilized dividend policy in American Telephone & Telegraph Co. issues. If it were to suspend such dividends, the blue chip reputation of AT&T would deteriorate, shaking the entire security market to its very foundation. As shown in recent telephone rate cases, the immediate problem of most telephone companies is to get enough return for "daily bread," so to speak, to say nothing of amassing a reserve for reinvestment.

• • •

P. S. The saucy *New Yorker* magazine has come up with the answer to an etiquette problem which may be worrying users of the new automobile telephone equipment. How should a chauffeur in a telephone equipped automobile respond when the telephone rings? The *New Yorker* reports that the driver for a Boston gentleman named Harrison, solves this question by answering as follows: "Mr. Harrison's Cadillac, Lawson speaking."



"Mrs. Fuddler, I represent the telephone company, —er—we have a suggestion about hanging your clothes."

Cable Splicing

(Concluded from page 20)

The cap from one type of desiccant container holds five grams and may be used as a measure.

Before slipping the lead sleeve over the splice, be sure that it is clean and dry inside. Slipping of the sleeve over a desiccant dried splice wrapped with dry muslin may be facilitated by rubbing stearine or soapstone over the muslin.

(To Be Continued)

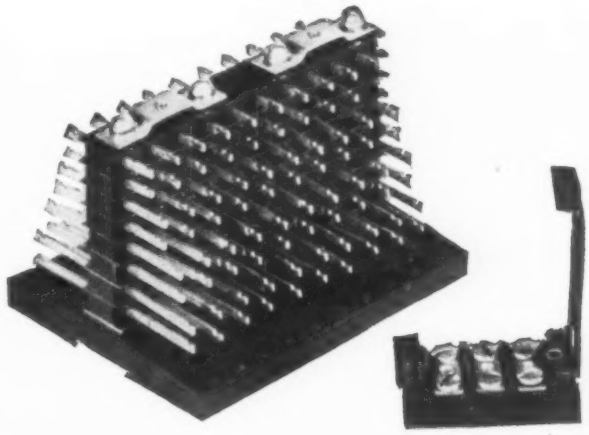
V V

Britain Is Becoming More Telephone-Minded

Figures show that Britain is growing more telephone-minded every year. Since 1939, the number of long distance calls made per year has nearly doubled from 115,000,000 to 214,000,000 in 1947. Since the end of the war local traffic also has risen very sharply. In 21 months up to last autumn, Post-office telephone engineers installed 1,332,000 new telephones. Before the

FAHNESTOCK

Terminal and Connecting Blocks



BUCKEYE TELEPHONE & SUPPLY CO.

COLUMBUS 6, OHIO

AVAILABLE FOR QUICK DELIVERY

Fahnestock terminal and connecting blocks have been standard equipment on all telephone and telegraph lines of the railroads and telegraph companies in the United States and Canada for the past 20 years and meets all A.A.R. Communications Section requirements. The terminal block's base and fanning strips are made of molded bakelite, and this, together with its phenolic insulation strips, makes it far superior to the rubber or wooden types and can be had from 10 to 80 wire capacity.

The smaller 7-B connecting block hardly needs description, except that its cover is non-removable and the screws are peaned over to prevent them from dropping out.

Write for information today.

Crapo

Galvanized Steel* CABLE LASHING WIRE

AVAILABLE FOR PROMPT DELIVERY!

The new *Crapo* Galvanized Steel Lashing Wire (.091-inch diameter) now is available for almost immediate delivery. This improved wire has been developed especially for use with modern cable-spinning machines. It is manufactured from selected steel, carefully processed and heavily galvanized to conform, in every respect, to specifications approved by leading telephone engineers.

Crapo Galvanized Steel Cable Lashing Wire comes in neat, compact, thread-lay coils containing approximately 325 feet. Packed in cartons of 6 coils each.

Ask your Jobber or write direct!

**Crapo* Cable Lashing Wire also is available in "Stainless Steel," .065-inch and .045-inch diameter.

INDIANA STEEL & WIRE CO.
MUNCIE, INDIANA

• • •

war it would have taken not 21 but 37 months.

One out of three telephones in the country today has been installed since the war. That means 1,500,000 out of the 4,500,000 telephones working today. The total number of outstanding telephone applications for direct exchange lines in April last was approximately 450,000.

The Postoffice, throughout the country, is making a special effort to inform its staff of the nation's telephone problems and difficulties. This is being done by means of a film strip and a lecture under the title "The Crisis and the Telephone." Teams of lecturers are going from place to place telling and illustrating by the film strip, the efforts of the telephone department before, during, and since the war.

V V

Elected Head of Editors Club

A. B. Gorman, advertising manager of the Lincoln (Neb.) Telephone & Telegraph Co. and editor of its monthly house organ, has been elected president of the Industrial Editors club of Nebraska, affiliated with the Southwestern Association of Industrial Editors.

V V

OBITUARIES

JAMES S. OGDEN, superintendent of the Orange County Telephone Co., Middletown, N. Y., died Aug. 19. His wife, Mrs. Ellen Jane Raymond Ogden, died several years ago. A sister, Mrs. Alma Cuddeback, survives.

• • •

Miss BELLE BERNETHA, chief telephone operator of the Rochester (Ind.) Telephone Co. until her retirement in 1940, died Aug. 20, following an heart attack.

Born in Royal Center, Ind., she was associated with the Rochester company from the date of its organization, in 1896.

She was a member of the Telephone Pioneers of America and the Independent Pioneer Telephone Association.

At the beginning of his office hours on Aug. 2 Sen. Raymond E. Baldwin (R., Conn.), was the recipient of what was perhaps the first telephone call recorded under the new Federal Communications Commission order regulating the use of recording devices on telephone instruments. As Senator Baldwin talked with Lincoln Thompson, president of The Soundscriber Corp., in New Haven, Conn., a high pitched, almost musical tone, called a "beep," signalled the senator that his telephone call was being recorded. This tone is introduced into the telephone lines by a device which connects recorder and telephone, and is installed by telephone companies.

The original telephone recording between Senator Baldwin and Mr. Thompson, made on a green plastic disc, will be presented to the National Archives in Washington and live-voice copies will be kept by the two parties in the conversation. Near the conclusion of the call, Mr. Thompson played back through the telephone to Senator Baldwin a part of the recording which was being made.

In the above picture are Senator Baldwin (left) and Mr. Thompson.

Kentucky Firm Offers Installation Service

Telephone Installation Services, Louisville, Ky., organized in October, 1946, has announced that its installation and maintenance services are available to Independent telephone companies.

J. C. VANDINE

Telephone Installation Services is under the supervision of Joe C. Vandine, who has had many years' experience in both installation and maintenance of dial and manual equipment.

V V

Magneto Switchboard Supply Bulletin Published by Leich

Magneto switchboards and switchboard equipment and supplies are the subjects of a 22-page bulletin issued recently by the Leich Sales Corp., 427 W. Randolph St., Chicago 6, Ill. Switchboards of varying capacities are presented—those suited to large and small exchanges and a magneto wall switchboard for use where the size of exchange is not expected to exceed 15 or 20 lines. Accounts of the overall construction and framework of the switchboards and types of drop supervision, lines, cord circuits, keys, drops and jacks are also given.

The remainder of the bulletin is composed of photographs and descriptions of keys, plugs, transmitters, receivers, types and sizes of cords, and the component parts of drops and jacks.

V V

Fire Losses for Year Ending July 31, Highest in History

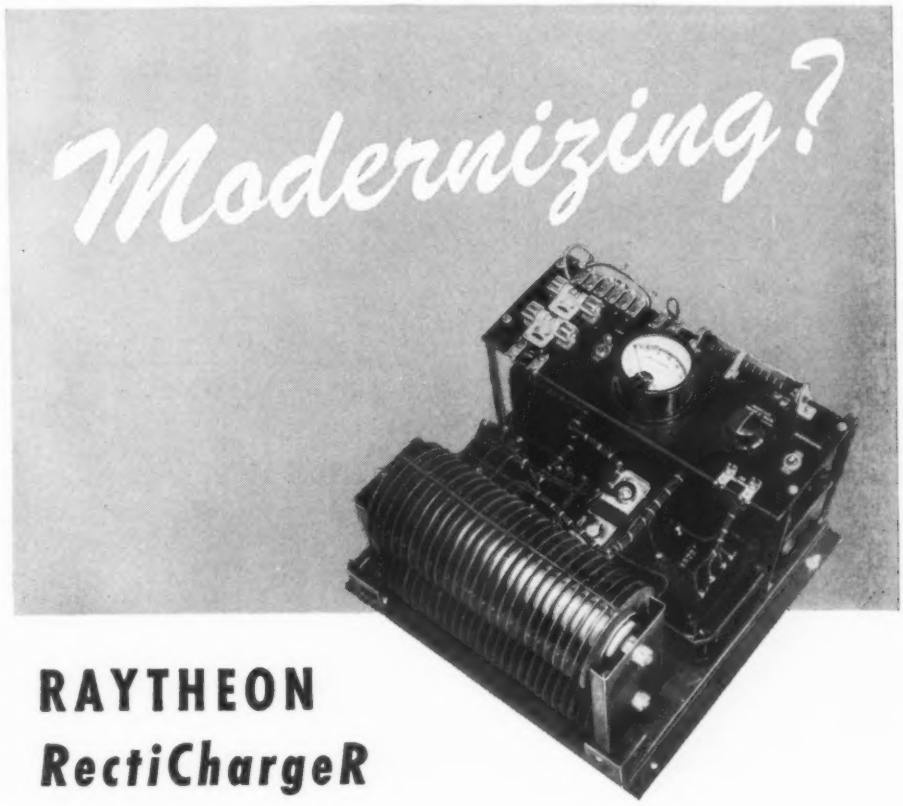
Estimated fire losses in the United States continued their upward movement during July, with a total destruction of $50,955,000 worth of property, it was announced recently by the National Board of Fire Underwriters.

This was 3.2% higher than $49,357,000 during July, 1947, and represents a seasonal decline of 6.9% from losses of $54,706,000 in June, 1948.

Fire waste in July added, however, to the all-time high level of fire destruction for the year to date and for the past 12 months. The total for the first seven months of 1948 was brought up to $437,435,000, far exceeding the total destruction for the full year of 1944, which was $423,538,000.

July losses brought the total for the 12-month period, ending the 31st of that month, to a record breaking $711,437,000, a figure of fire destruction never before reached in United States history. This represents an increase of 10.8% over losses of $641,816,000 for the 12-month period ending July 31, 1947.

These estimates of national fire losses are based on reported losses under fire insurance policies, including an allowance for uninsured and unreported losses.



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Maintains the Close Voltage Limits Required for Automatic Systems

Raytheon RectiChargeRs provide dependable, closely regulated DC power at low cost. Battery activity is cut to the minimum with RectiChargeRs carrying the normal load. Completely automatic, they require no adjustment, no maintenance. And your batteries require little or no attention . . . last up to 40% longer.

Write for Bulletin DL-RCR-506

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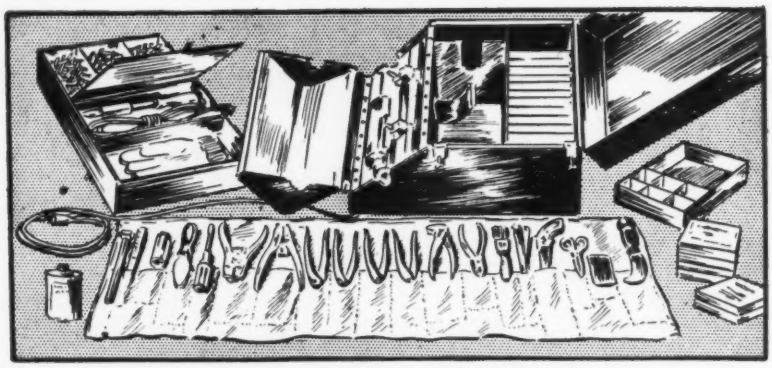
COMPLETE ★ COMPACT ★ ECONOMICAL ★ PORTABLE



BRAND NEW — ELECTRIC VULCANIZING

CABLE REPAIR KIT

MAKES PERMANENT CABLE REPAIRS AND SPLICES

A complete kit with metal case and partitions that contains everything that is needed to make quick, efficient permanent repairs in the shortest possible time. Comes complete with simplified instruction books so that even a novice electrician can make professional repairs and splices.

COST GOVT. OVER $220.00

HAS 24 TOOLS WORTH MORE THAN WE ASK FOR COMPLETE KIT.

Also has over 325 pieces of expendable repair materials. Must be seen to appreciate. Send for complete listing of materials and additional literature.

OUR PRICE $27.50

2 FOR $50.00

Shipped Your Instructions F.O.B.

Rated firms shipped on open account — Others send check. Satisfaction Guaranteed.

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J. JACOB SHANNON & CO.

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LONG LIFE

Neoprene Jacketed Drop and Bridle Wire

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Manufactured and Tested to Rigid Specifications

ALPHADUCT WIRE & CABLE CO.

Milltown, New Jersey Telephone: Milltown 8-0030

Automatic Electric Expands Supply Service Organization

Announcement has been made by Automatic Electric Co. that George L. Ferguson, formerly manager of supply sales for Automatic Electric Sales Corp., has been named manager of

G. L. FERGUSON

Automatic Electric's supply department, with complete supervision over supply procurement, inventories, order entry, packing and shipping, and all other operating functions involved in that branch of the company's business.

C. W. SCHWOB

Mr. Ferguson's long experience in the telephone supply field is well known throughout the industry, and has given him unusually broad knowledge of the requirements of operating companies and wide acquaintance among both manufacturers and users of supply products. His new appointment now brings the company's supply organization under a single administrative head, with resulting close coordination of functions.

Announcement has also been made by Automatic Electric Sales Corp. that

Carl W. Schwob of that company's sales staff has been appointed manager, supply sales, succeeding Mr. Ferguson. Mr. Schwob, who has been active in supply sales for the past year, now has complete charge of that function, and will cooperate closely with Mr. Ferguson in further increasing the effectiveness of the company's service to its customers.

V V

Sargent Names Schollhorn Sales Manager

Walter Scott, for some 21 years a sales representative for Sargent & Co., New Haven, Conn., has been appointed sales manager of its Schollhorn Divi-

WALTER SCOTT

sion. This division handles the products of the former 75-year-old Wm. Schollhorn Co. which was recently taken over by Sargent.

Schollhorn products, which include pliers, punches, shears and many specialized tools used in a wide range of industries, are also well known to the consumer, especially the Bernard line of pliers.

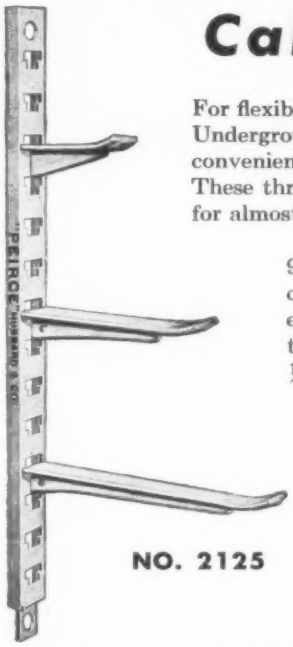
"Don't ask me where to install it. I never express a definite opinion in an election year."

(Courtesy, Telefun)

JOHN LINEMAN OFFERS..

PEIRCE

Underground Cable Racks



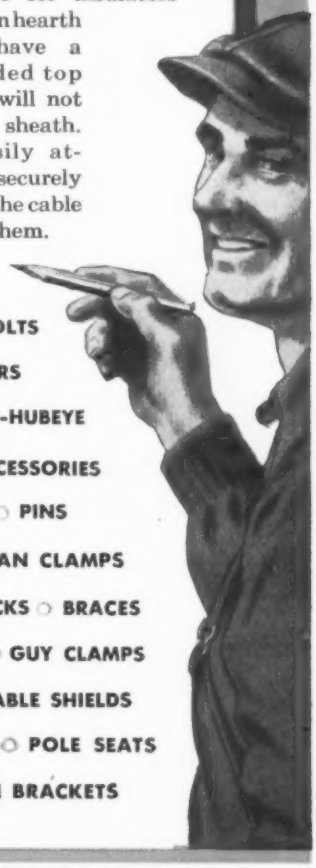
NO. 2125

For flexibility and ease of installation, Peirce Underground Cable Racks are made in three convenient lengths: 15, 24, and 30 inches. These three basic sections may be combined for almost any desired length.

Sections are made from 1½ by 9/16 by 3/16-inch open hearth steel channel and will support the heaviest cables. Racks are fastened to the manhole walls by means of a ½ by 4-inch Peirce Expansion Bolt.

Hooks adaptable for insulators and cut from open hearth "T" sections, have a smoothly rounded top surface which will not injure the cable sheath. Hooks are easily attached and lock securely when weight of the cable is placed upon them.

A. T. & T. Co. Standard



ALSO—

HUBEYE NUTS ○ HUBEYE BOLTS
ANCHORS, PLATE AND SCREW ○ MANHOLE LADDERS
BRACKETS, POLE, CORNER AND HOUSE ○ EYE BOLTS-HUBEYE
CARRIAGE BOLTS ○ CROSS ARM BOLTS ○ GUYING ACCESSORIES
CABLE SUSPENSION HARDWARE ○ POLE BALCONIES ○ PINS
STORM GUY ATTACHMENTS ○ SIDE-WALK GUYS ○ SPAN CLAMPS
LAG SCREWS ○ MESSENGER DEAD ENDS ○ CABLE RACKS ○ BRACES
DRIVE HOOKS ○ EXTENSION ARMS ○ POLE STRUTS ○ GUY CLAMPS
POLE STEPS ○ STUBBING BANDS ○ STRAIN PLATES ○ CABLE SHIELDS
GUY PROTECTORS ○ GUY HOOKS ○ MACHINE BOLTS ○ POLE SEATS
GRADE CLAMPS ○ GROUND RODS ○ TRANSPOSITION BRACKETS

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HUBBARD AND COMPANY
ESTABLISHED 1843
PITTSBURGH CHICAGO
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THE NEW 30 CYCLE SUB-CYCLE

a ringing machine for use with
SYNCHROMONIC SYSTEMS

• Replace your 30 cycle Vibrator with this new "BC" (Biased Core) Sub-cycle which features:

1. Automatic start without relay
2. Improved ringing voltage regulation
3. Self protecting on overloads; no relay operation required for restarting
4. Low inrush current
5. May be used on Start-Stop ringing circuits.

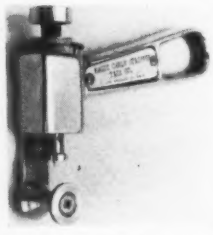
These 3 models are available:
Model 30M—for P. B. X. operation
Model 30S—for regular service
Model 30C—for heavy duty

For full details write for Bulletin 151, or ask your distributor about the Model 30 "BC" Subcycle.

LORAIN PRODUCTS CORPORATION
DEPT. C
1122 F STREET LORAIN, OHIO

FLOTROL
PARTNERS IN DEPENDABILITY
SUB-CYCLE

The Magic Cable Stripper



SAFE
Convenient
Light Weight
Sturdy

STRIPS CABLE
Plastic Covered
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Here is a must for every telephone and radio equipment installer. The "Magic Cable Stripper" has been designed particularly to solve one of the most annoying and dangerous problems of cable stripping. This tool will safely, surely and easily strip any size Rubber, Plastic or Fabric covered cable; special attachment for lead cable up to 1 inch O.D. The body of the "Magic Cable Stripper" is of cast aluminum with all operating mechanism of tempered steel, insuring long life. The replaceable blade is of tempered steel with an adjustable screw at bottom of blade to adjust length of blade cutting edge. The shuttle is equipped with an adjusting nut to regulate depth of cut and when properly set can be locked in place, thus eliminating danger of cutting wires. Cutting mechanism on Model R has positive friction brake, or can be used in free wheeling for rough and uneven cables. Model X has no brake. The "Magic Cable Stripper" comes equipped with extra blade, carried in handle compartment.

UNCONDITIONALLY GUARANTEED

Order yours today. Try it and if you don't find it to be the best cable stripper you have ever used, just send it back.

To order or for further information Address

TACA COMPANY
4307 RAYNOL STREET
LOS ANGELES 32, CALIFORNIA

Three-position turret switchboard of TVA.

TVA Installs Turret Board To Coordinate Plants

One of the most unusual installations of equipment manufactured by the Kellogg Switchboard & Supply Co., Chicago, Ill., is a three-position turret-type switchboard at the central load dispatcher's office of the TVA (Tennessee Valley Authority) in Chattanooga, Tenn. The communications network needed to coordinate TVA's power plants is said to be the largest and most modern of any owned by a single power utility in the world.

It is the switchboard shown in the accompanying photograph that is the "key" control for a 6,000-mile telephone system. Use of the board keeps engineers and operators at all the widely separated dams and power stations in touch with each other day and night.

Load dispatching involves keeping a continuous balance between different sized turbines, which are kept spinning by water falling from TVA dams, and the varying needs for kilowatt-hours by users. Since the TVA covers an 80,000 square mile area, the highest control precision is required.

This is where the need for a reliable communications network, tied together by a "master" turret switchboard, arises. The switchboards of the TVA communications network are thus coordinated through the turret board in the central load dispatcher's office.

About half of the TVA telephone circuits are "power line carriers"—that is, telephone conversations are carried over the high-voltage power lines themselves instead of the usual telephone lines. The TVA telephone network carries 2,500,000 messages each year.

Graybar Makes E. E. Martin Assistant Manager at Boston

E. E. Martin has been made assistant district manager at Boston for Graybar Electric Company, according to a recent announcement. The appointment became effective immediately.

Mr. Martin has served with Graybar for 28 years, beginning his career as a service clerk at Philadelphia. He has successively been store supervisor, Baltimore; appliance salesman, New York; supply salesman, Syracuse; branch manager, Syracuse; manager lamp and lighting departments, New York; assistant sales manager, New York; and until his present assignment, district operating manager, New York.

E. A. McGrath, who has been district operating manager at Detroit for the past five years will go to New York to succeed Mr. Martin.

M. O. McIlvain will take Mr. McGrath's assignment at Detroit. He has been district operating manager at Kansas City for 12 years.

A. W. Rimensnyder of Graybar's Philadelphia office will become District operating manager at Kansas City.

V V

>> In its current advertising campaign to impress upon Americans the material advantages of private enterprise, the First National Bank of Chicago, in one of its advertisements, stated that "there is one telephone for each five persons in the United States. How does this compare with other countries? There is one for 12 in Great Britain, one for 21 in France, one for 62 in Spain and one for 125 in Russia." The bank could have added, "And the service here is incomparably better."

American Steel Makes Two Appointments

Walter E. Mackley has been appointed manager of the New York district sales office of American Steel & Wire Co., United States Steel subsidiary. F. L. Nonnenmacher has been named manager of manufacturers' products sales to succeed Mr. Mackley, while Harold Christopher has been promoted to the position of assistant manager of that department.

Mr. Mackley succeeds B. W. Bennett, who has been named assistant to the vice president in charge of sales of the American Steel & Wire Co. In his new capacity, Mr. Bennett will continue to maintain his office in New York, and will handle special assignments.

V V

R. A. Kirkman Joins Cook Laboratories

Cook Research Laboratories, Chicago, Ill., announce the appointment of Robert A. Kirkman to their engineering staff. His work will be principally in the design and development of high-frequency communication equipment, including radar.

Mr. Kirkman comes to Cook Research directly from the Signal Corps Engineering Laboratories where he was chief section engineer for a period of five years. During the previous eight years he was associated with Teleradio Engineering Corp., York Sound Research, General Electric Co., and Municipal Broadcasting System in various engineering capacities.

R. A. KIRKMAN

Mr. Kirkman is active in professional groups, and at present is a senior member of the Institute of Radio Engineers, an alternate director of the American Relay League and a member of the Research and Development Board sub-panel on electronic tubes.

V V

Thieves Loot $600,000 in Army Cable in Manila

The U. S. Army reported recently that thieves had stolen from $600,000 to $800,000 worth of its telephone cables in the Manila area alone in the past 12 months.

The copper in the cable has a rising value on the black market and thieves are getting increasingly bold.

The Philippines Long Distance Telephone Co., which says it also has "sizable losses," reported thieves even stole some of its cable from a manhole right across the street from the city hall.

V V

>> Though trans-Atlantic telephone communication had been proved successful several years before, the big day that inaugurated commercial service between New York and London was Jan. 7, 1927. Within a very short time, the service was expanded to include subscribers in the United States, England, Scotland and Wales.

THEY ALL LIKE IT

EVERY operator who has used this efficient head microtelephone praises its light weight and adjustability to the head. Moreover, transmission engineers have noted that transmission is unvaried by head movement. This is an improved factor in coping with today's heavy traffic loads.

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FOR SALE: County seat telephone exchange 100 stations, good rates. Plant in good condition, located in five room home. Plant, property and invoice priced less than twice yearly gross income. Write Galena Telephone Co., Galena, Mo.

FOR SALE: Located in Middle-Tennessee, in the heart of the Tennessee Walking-Horse area, a 160 station magneto telephone exchange. Plant has been completely rebuilt in past three years; all lines metallic pair on native red cedar poles. Rate increase in effect since June 1, 1947 brings gross income to $5,500 plus. Property includes building 24 ft. by 48 ft. finished in white asbestos shingles with office and living quarters; a Ford Half Ton Truck with plenty of tools and equipment. Will sell for $6,000. Write Box No. 2658, c/o TELEPHONY.

FOR SALE: Generous line clearance service at flat mileage rates to specification. Minor maintenance repairs on request. Rural goodwill expertly promoted. American Tree Craft, 607 Catherine St., Ann Arbor, Mich.

FOR SALE: Approximately 600 stations magneto exchange two-position board, lines metallic, real estate and equipment. Write Manhattan Telephone Co., Manhattan, Ill.

FOR SALE

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NEW, Kellogg ringers, biased, 1000 Ohm #79-91-A, complete with gongs, Mtg. screws @ $1.60 each. Lots of 100 @ $1.40 each. Western Electric plugs #47, cords attached @ .75 each.
Independent Telephone Repair Co.
1432 West Fifteenth St. Chicago 8, Ill.

FOR SALE: One E E 99 A telephone repeater — U. S. Signal Corp. — with manual. New—$36. Write St. Clair County Telephone Co., Pell City, Ala.

FOR SALE
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Western Electric "packaged" 3-channel VF telegraph terminals.
W.E. CF2-B 4-channel V.F. telegraph terminals.
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W.E. H and H-1 line filter and balancing nets.
CFD 4-channel telephone terminals with automatic pilot channel regulator.
CFD 4-channel repeater.
W.E. EE-100, 1000/20 single channel V. F. ringer.
W.E. EE-101A, 1000/20 dual channel V.F. ringer.
W.E. 1000/20 V.F. ringer oscillators (J68602AW-2).
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RAILWAY COMMUNICATIONS, Inc.
P. O. Box 1783 Phone 2-6487
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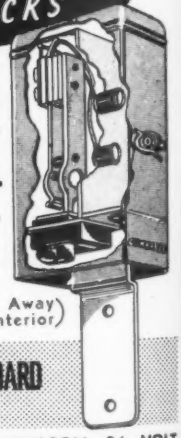

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